

cyclin A (AT10.2): sc-53227

BACKGROUND

The critical role that the family of regulatory proteins known as cyclins play in eukaryotic cell cycle regulation is well established. The best-characterized cyclin complex is the mitotic cyclin B/Cdc2 p34 kinase, the active component of maturing promoting factor. Cyclin A accumulates prior to cyclin B in the cell cycle, appears to be involved in control of S phase and has been shown to associate with cyclin-dependent kinase-2 (Cdk2). In addition, cyclin A has been implicated in cell transformation and is found in complexes with E1A, transcription factors DRTF1 and E2F and retinoblastoma protein, p110. A second form of cyclin A, named cyclin A1 because of its high sequence homology to *Xenopus* cyclin A1, is most highly expressed in germ cells. It has been proposed that cyclin A1 can associate with Cdk2, p39 and Cdc2 p34.

REFERENCES

1. Draetta, G., et al. 1989. Cdc2 protein kinase is complexed with both cyclin A and B: evidence for proteolytic inactivation of MPF. *Cell* 56: 829-838.
2. Giordano, A., et al. 1989. A 60 kd Cdc2-associated polypeptide complexes with the E1A proteins in adenovirus-infected cells. *Cell* 58: 981-990.

CHROMOSOMAL LOCATION

Genetic locus: CCNA2 (human) mapping to 4q27; Ccna2 (mouse) mapping to 3 B.

SOURCE

cyclin A (AT10.2) is a mouse monoclonal antibody raised against recombinant cyclin A of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

cyclin A (AT10.2) is recommended for detection of cyclin A of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for cyclin A siRNA (h): sc-29282, cyclin A siRNA (m): sc-29283, cyclin A shRNA Plasmid (h): sc-29282-SH, cyclin A shRNA Plasmid (m): sc-29283-SH, cyclin A shRNA (h) Lentiviral Particles: sc-29282-V and cyclin A shRNA (m) Lentiviral Particles: sc-29283-V.

Molecular Weight of cyclin A: 54 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, F9 cell lysate: sc-2245 or HuT 78 whole cell lysate: sc-2208.

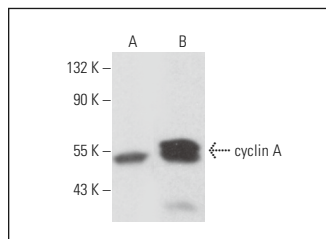
RESEARCH USE

For research use only, not for use in diagnostic procedures.

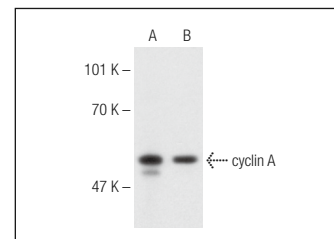
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



cyclin A (AT10.2): sc-53227. Western blot analysis of cyclin A expression in F9 (A) and K-562 (B) whole cell lysates.



cyclin A (AT10.2): sc-53227. Western blot analysis of cyclin A expression in K-562 (A) and HuT 78 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zhang, A.T., et al. 2011. Dynamic interaction of Y RNAs with chromatin and initiation proteins during human DNA replication. *J. Cell Sci.* 124: 2058-2069.
2. Ma, X., et al. 2015. Therapeutic delivery of cyclin-A2 via recombinant adeno-associated virus serotype 9 restarts the myocardial cell cycle: an *in vitro* study. *Mol. Med. Rep.* 11: 3652-3658.
3. Cao, W., et al. 2017. Synergistic cardioprotective effects of rAAV9-cyclin A2 combined with fibrin glue in rats after myocardial infarction. *J. Mol. Histol.* 48: 275-283.
4. Becker, J.R., et al. 2018. The ASCIZ-DYNLL1 axis promotes 53BP1-dependent non-homologous end joining and PARP inhibitor sensitivity. *Nat. Commun.* 9: 5406.
5. Roci, I., et al. 2019. Mapping metabolic events in the cancer cell cycle reveals arginine catabolism in the committed SG2M phase. *Cell Rep.* 26: 1691-1700.
6. Chew, N.J., et al. 2020. FGFR3 signaling and function in triple negative breast cancer. *Cell Commun. Signal.* 18: 13.
7. Pennycook, B.R., et al. 2020. E2F-dependent transcription determines replication capacity and S phase length. *Nat. Commun.* 11: 3503.
8. Paredes, F., et al. 2023. Metabolic regulation of the proteasome under hypoxia by Poldip2 controls fibrotic signaling in vascular smooth muscle cells. *Free Radic. Biol. Med.* 195: 283-297.
9. Yip, H.Y.K., et al. 2024. Integrative modeling uncovers p21-driven drug resistance and prioritizes therapies for PIK3CA-mutant breast cancer. *NPJ Precis. Oncol.* 8: 20.



See **cyclin A (B-8): sc-271682** for cyclin A antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.